Eaton Series

Battery Upgrade Instructions

For use with the Eaton® 9355 (20–30 kVA)

Powering Business Worldwide

Revision 02

IMPORTANT SAFETY INSTRUCTIONS SAVE THESE INSTRUCTIONS

This manual contains important instructions that you should follow during installation and maintenance of the UPS and batteries. Please read all instructions before operating the equipment and save this manual for future reference.

CONSIGNES DE SÉCURITÉ IMPORTANTES — CONSERVER CES INSTRUCTIONS

Ce manuel comporte des instructions importantes que vous êtes invité à suivre lors de toute procédure d'installation et de maintenance de la UPS. Veuillez consulter entièrement ces instructions avant de faire fonctionner l'équipement et conserver ce manuel afin de pouvoir vous y reporter ultérieurement.

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Chapter 1 Introduction

The two-row battery tray (P/N: P-103000933, revision 5) that was used for the 9355 20-30kVA is now discontinued. Upgrade kit P-106000220 facilitates replacing one existing two-row battery tray assembly with two single-row battery assemblies.

The total battery string voltage in a 9355 20-30 kVA UPS is 216V (18 batteries, where is each battery is 12V nominal). Two strings fit in each battery shelf of the 9355 20-30 kVA UPS. The two-row tray configuration that is being replaced holds 18 batteries, connected to make one circuit. The two-row tray red connector is the most positive connection while the black is the negative connection. The white connector presents the middle point in the two-row tray configuration, where 108V is measured from the white to the red and 108V from the white to the black. **The white connector is used for CSE testing only.**

The replacement trays contain nine batteries each, such that it takes two single-row trays to complete one string. Each single-row battery tray has one circuit.

Each replacement kit (P-106000220) includes two single-row battery trays and two harness adapters. Only one harness adapter is needed for the installation; the second harness adapter is a spare.

Figure 1. Discontinued Two-Row Battery Tray P-103000933

Figure 2. Upgrade Kit P-106000220 (Two Cartons) Includes Two Single-Row Battery Trays and Two Wiring Harness Adapters

Figure 3. Wiring Harness Adapter P-152001881

Chapter 2 Battery Upgrade Procedure

If you are replacing more than one two-row battery tray, repeat Step 6 through Step 15 for each battery tray/shelf.

WARNING

This procedure involves interacting with components that may be energized.

Any and all work can involve hazards when working on electrical equipment. The work must be done in accordance with all applicable local, federal, or other safety requirements and must be performed by qualified personnel.

1. Remove the 9355 20–30kVA front door (see Figure 4).

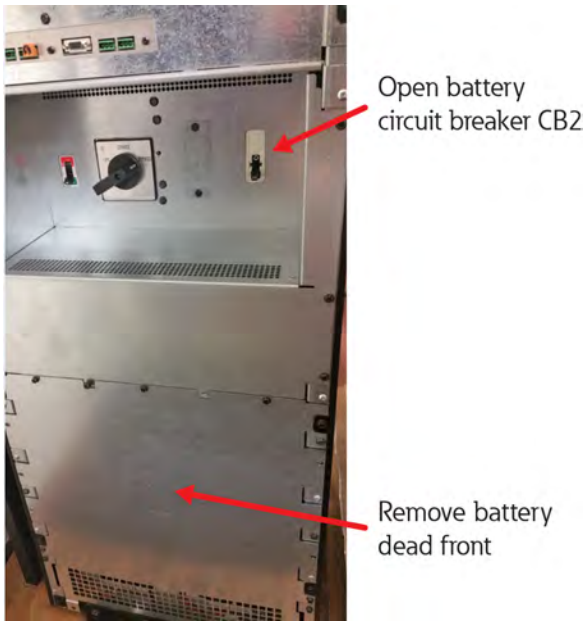
Figure 4. Remove the UPS Front Door

IMPORTANT

In the event of input power failure while performing this procedure, battery backup will not be available.

2. Follow the instructions in the manual to place the 9355 20-30kVA UPS in bypass and in maintenance bypass. However, if the UPS cannot be placed in maintenance bypass, this procedure can still be performed.
3. Open the UPS battery circuit breaker CB2 (see Figure 5). Follow lockout/tagout procedures.
4. Remove the thirteen M5 bolts from the battery panel cover (dead front) and remove it (see Figure 5).

Figure 5. Open the Battery Circuit Breaker CB2 and Remove the Battery Dead Front



5. As shown in Figure 6, disconnect the positive (red) and negative (black) battery connectors for **all the battery trays**.

NOTE If an external battery cabinet is attached, it must also be disconnected from the UPS.

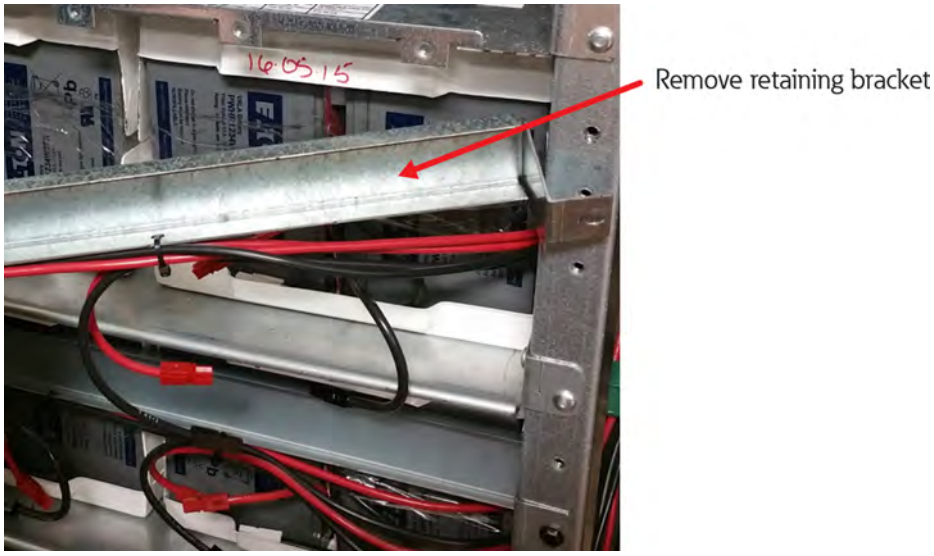
Figure 6. Disconnect All Battery Trays

WARNING

All battery trays must be disconnected before proceeding.

6. Remove the two M5 bolts that secure the retaining bracket on the battery shelf for the battery tray to be replaced (see Figure 7).

Figure 7. Remove the Battery Retaining Bracket

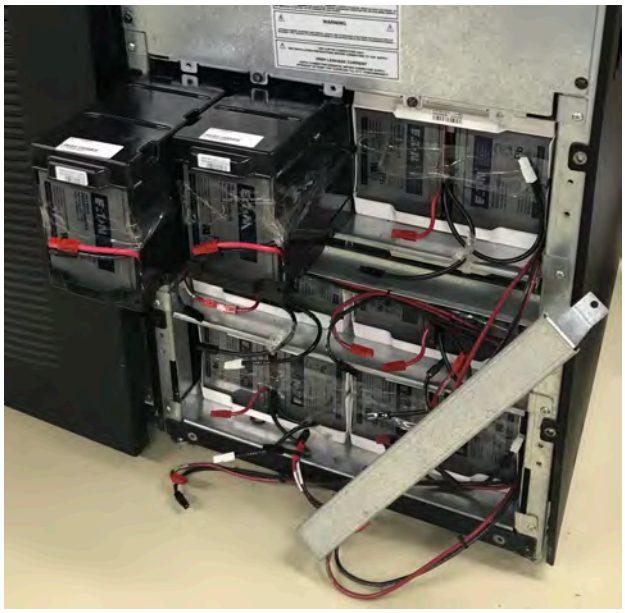


7. Remove the two-row battery tray that needs replaced from the unit (see Figure 8).

Figure 8. Remove an old Two-Row Battery Tray

8. Slide two new single-row trays in place of the tray that was removed. The two new single-row trays are now side-by-side with another string, forming two battery strings (see Figure 9).

Figure 9. Slide Two Single-Row Battery Trays into Place



9. Re-install the battery retaining bracket and secure using the two M5 bolts removed in Step 6(see Figure 10).
10. Cut the tie wrap securing the UPS battery harness to the battery retaining bracket (see Figure 10).

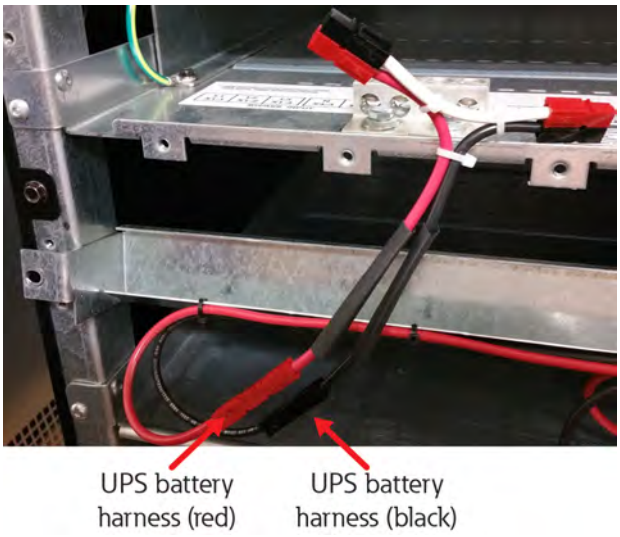
Figure 10. Re-install Battery Retaining Bracket and Remove Tie-Wraps

11. Install the adapter on the UPS side battery harness (see Figure 11). Connect the adapter to the UPS battery harness (red–to–red and black–to–black).

WARNING

It is critical that these connections are correct. A harmful arc flash will occur if these connections are crossed.

Figure 11. Install Battery Harness Adapter

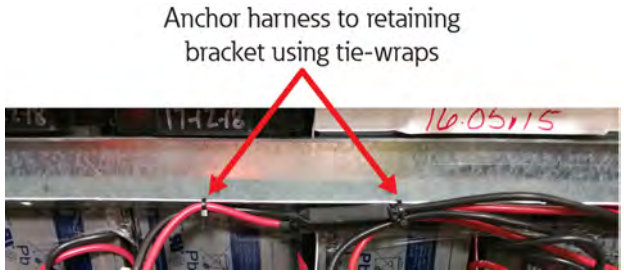


12. Slide the heat shrink tubing over the connectors, centering it. Use tie-wraps at each end of the heat shrink tubing to hold it in place (see Figure 12).

Figure 12. Install Heat Shrink Tubing and Secure Using Tie-Wraps

13. Adjust the wiring so that the battery panel cover can be replaced. Then anchor the UPS battery harness to the battery retaining bracket using tie wraps (see Figure 13).

Figure 13. Anchor Battery Harness to Battery Retaining Bracket

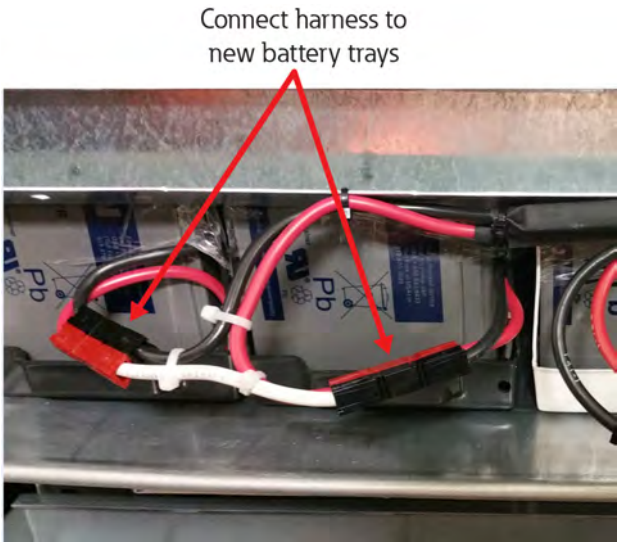


CAUTION

Observe proper precautions when verifying polarity. It is recommended that polarity checks are performed by qualified personnel knowledgeable of batteries.

14. Verify the correct polarity before making connections.
15. Connect the UPS battery harness to the two newly installed single-row battery trays (see Figure 14).

Figure 14. Connect Battery Harness to New Single-Row Battery Trays



16. Reconnect the positive (red) and negative (black) battery connectors for **all of the battery trays**. Verify polarity before making each connection. All cabinet strings should now measure 216V (nominal).

NOTE When making connections, it is preferable to make all connections of the same color first, then make all connections of the other color. For example, make all red connections first, then make all black connections.

17. Re-install the battery cover panel (dead front) using the thirteen M5 bolts removed in Step 4.

NOTE If an external battery cabinet is attached, reconnect it to the UPS.

18. Follow the instructions in the manual to command the unit to normal mode of operation.
19. Reinstall the unit front door.